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(FILE 'HOME' ENTERED AT 15:24:30 ON 18 APR 2008)

FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPATOLD, USPAT2' ENTERED AT
15:24:53 ON 18 APR 2008

L1 604596 S (SINGLE OR MONO) (8A) (CRYSTAL?)
L2 61094 S (GA OR GALLIUM) (8A) (NITRIDE#)
L3 58411 S (NH3 OR AMMONIA) (8A) (SOLVENT# OR LIQUID#)
L4 3904 S (MINERALIZER#)
L5 2083 S (FEEDSTOCK#) (10A) (TRANSIT? OR CHANG? OR MORPH?)
L6 2534 S L2 AND (POLYCRYSTAL?)
L7 7554363 S (METAL?)

=> s l1 and l2 and l3 and l4 and l5 and l6 and l7

L8 2 L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7

=> d l8 1-2 abs,bib

L8 ANSWER 1 OF 2 USPATFULL on STN

AB A process for obtaining bulk mono-crystalline gallium-containing nitride, eliminating impurities from the obtained crystal and manufacturing substrates made of bulk mono-crystalline gallium-containing nitride has been now proposed. According to the invention, the process for obtaining of mono-crystalline gallium-containing nitride from the gallium-containing feedstock in a supercritical ammonia-containing solvent with mineralizer addition is characterized in that the feedstock is in the form of metallic gallium and the mineralizer is in the form of elements of Group I and/or their mixtures, and/or their compounds, especially those containing nitrogen and/or hydrogen, whereas the ammonia-containing solvent is in the form of the mineralizer and ammonia, there are two temperature zones in each step of the process, and the feedstock is placed in the dissolution zone, and at least one mono-crystalline seed is deposited in the crystallization zone, and following the transition of the solvent to the supercritical state, the process comprises the first step of transition of the feedstock from the metallic form to the polycrystalline gallium-containing nitride, and the second step of crystallization of the gallium-containing nitride through gradual dissolution of the feedstock and selective crystallization of gallium-containing nitride on at least one mono-crystalline seed at the temperature higher than that of the dissolution of the feedstock, while all the vital components of the reaction system (including the feedstock, seeds and mineralizer) invariably remain within the system throughout the whole process, and consequently bulk mono-crystalline gallium-containing nitride is obtained. The invention relates also the the post-treatment (slicing, annealing and washing) of the thus obtained crystals. The improved process and the bulk monocrystals obtained thereby are intended mainly for use in the field of opto-electronics.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2006:44069 USPATFULL

TI Process for obtaining bulk mono-crystalline gallium-containing nitride

IN Dwilinski, Robert, Warsaw, POLAND

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 Sierzputowski, Leszek, Union, NJ, UNITED STATES
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 NICHIA CORPORATION, Anan-shi, JAPAN, 774-8601 (non-U.S. corporation)
 PI US 2006037530 A1 20060223
 AI US 2003-537804 A1 20031211 (10)
 WO 2003-JP15904 20031211
 20050607 PCT 371 date
 PRAI PL 2002-357697 20021211
 PL 2003-357698 20021211
 PL 2003-357699 20021211
 PL 2003-357700 20021211
 PL 2003-357701 20021211
 PL 2003-357702 20021211
 PL 2003-357703 20021211
 PL 2003-357705 20021211
 DT Utility
 FS APPLICATION
 LREP MORRISON & FOERSTER LLP, 1650 TYSONS BOULEVARD, SUITE 300, MCLEAN, VA,
 22102, US
 CLMN Number of Claims: 17
 ECL Exemplary Claim: 1
 DRWN 8 Drawing Page(s)
 LN.CNT 1939
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 2 OF 2 USPATFULL on STN

AB The invention relates to new improvements in a process for crystal
 growth in the environment of supercritical ammonia-containing solution,
 which are based on use of specific azide mineralizers and
 result in the improved bulk Group XIII element nitride
 monocrystals, in particular bulk monocrystalline gallium
 -containing nitride, intended mainly for variety of
 nitride-based semiconductor products such as various
 opto-electronic devices. The invention further relates to a
 mineralizer used for supercritical ammonia-containing solution
 which comprises at least one compound selected from the group consisting
 of LiN.sub.3, NaN.sub.3, KN.sub.3, and CsN.sub.3.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2006:37787 USPATFULL
 TI Process for obtaining of bulk monocrystalline gallium
 -containing nitride
 IN Dwilinski, Robert, Warsaw, POLAND
 Doradzinski, Roman, Warsaw, POLAND
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 PI US 2006032428 A1 20060216
 AI US 2003-519141 A1 20030417 (10)
 WO 2003-PL40 20030417
 20041227 PCT 371 date
 PRAI PL 2002-354740 20020626
 PL 2003-357697 20021211
 DT Utility
 FS APPLICATION
 LREP MORRISON & FOERSTER LLP, 1650 TYSONS BOULEVARD, SUITE 300, MCLEAN, VA,

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CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 1293
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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